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Mortuary theory, pottery and social complexity at Jebel Moya cemetery, south-central Sudan

The Jebel Moya massif lies in the southern part of the Gezira Plain which is situated between the Blue and White Niles south of the 6th Cataract (Fig. 1). The massif is approximately 250 km south south-east of Khartoum. It has a perimeter of 11 kilometres. The excavated area is known as Site 100, hereafter called Jebel Moya, and is situated in a basin-like valley within the north-eastern portion of the massif (Fig. 2).

Sir Henry Wellcome initiated the first of four excavation seasons on 29th January 1911 when the first test trenches were dug. These initial test trenches were named after the nearby villages which the respective workers came from, for example the Segadi and Moya New Trenches (Addison 1949). Around a fifth of the estimated 10.4 hectares of the site was excavated until the end of the fourth season in April 1914. Plans for further seasons were abandoned upon the onset of the First World War. In total, 3135 burials in 2791 graves were excavated, making it the largest burial complex yet excavated in sub-Saharan Africa.

The majority of the excavated artefacts and all of the physical anthropological remains and the excavation records were shipped to the United Kingdom where they were examined in the late 1930s and post-1945 (Addison 1949; Mukherjee et al. 1955). Subsequently, there have been two studies of note. The first was the revisiting of the issue of chronology by Rudolf Gerharz (1994) in the early 1990s using only the Registrar of Graves compiled and published by Addison. The second was a population affiliation study using dental characteristics of the

remaining teeth housed and curated by the Duckworth Laboratory (University of Cambridge) (Irish and Konigsberg 2007). The nature of the site and the wealth of inadequately interpreted artefacts provides a unique opportunity to extend the presently poor representation of social archaeological knowledge of the areas south of Khartoum (Sadig 2008; Salvatori 2012).

While the original fieldwork yielded important materials, no attempt has previously made to elucidate the nature of social organisation as reflected in the mortuary assemblages. There is a necessity to develop more sophisticated hypotheses about the development of the site, the elucidation of the changing nature of socio-political order in the southern Gezira Plain, and the processes affecting its cultural evolution in order to address a number of research questions in my ongoing doctoral research programme:

- Is the cemetery principally concentrated in one era of time or did it evolve over several discrete periods?
- To what extent are phenomena, including gender, age, grave goods and burial postures spatially clustered or scattered within the cemetery, and how do they aloe for informed social analysis of change?
- Does the distribution of grave goods spatially and temporally demonstrate significant social differentiation in comparison to comparative mortuary assemblages elsewhere in the Sudan and southern Egypt?

As such, this paper looks in brief first at issues of social complexity and mortuary archaeology in Africa today and secondly at how using these perspectives re-examination of the extant materials allow for informed social analysis of change at Jebel Moya.

Issues in social complexity

Over the last four decades in particular, diverse models on early cultural complexity in Africa have explored how social relationships, their interconnectivity and mediation through communities, embodiments of wealth and material culture create the social complexity embedded at all levels of society (MacDonald 1998; McIntosh 1998; McIntosh 1999; Di Lernia and Manzi 2002; Smith *et al.* 2002; Brass 2007; Garcea and Hildebrand 2009). The framing of archaeological research into this complex web elsewhere has previously been dominated by the tendency to downplay the full range of social diversity while focusing on high-level society as the epitome of social formation through the development of over-arching models. For example, dual inheritance theory has been used to integrate ritual and social inequality into a model outlining how ritually sanctioned justification may be mo-

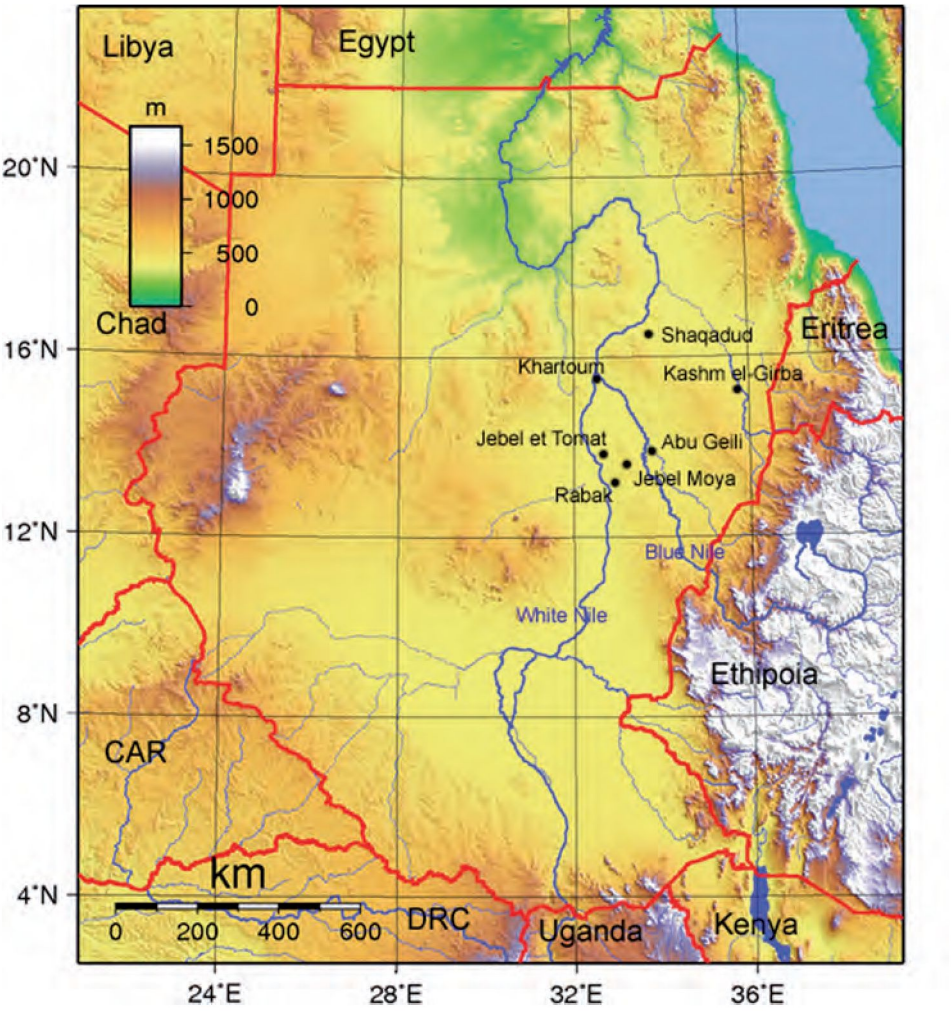

Fig. 1. Placement of Jebel Moya (Sudan) in relation to other well known sites

nopolized by high-ranking individuals to increase their lineage's social status (Boyd and Richerson 1985; Aldenderfer 1993; Richerson and Boyd 2005).

Combining the data and conclusions drawn from archaeology, oral traditions and historical linguistics, the seminal edited volume "Beyond Chiefdoms: Pathways to Complexity" (McIntosh 1999) aimed to challenge the prevailing neo-evolutionary paradigm which had marginalised Africa for the previous two decades in the debates on the forms, trajectories and manifestations of social complexity. Arguing also against Fortes and Evans-Pritchard's (1940) lumping of African soci-

eties into state and stateless categories characterised by kinship of lineage systems, the contributors presented case studies where political power was diffused heterarchically and invested in diverse structures such as age-groups, lineages, spirit cults and title societies.

With multiple loci of power, African ideologies and conceptions of power often balance competing interests which cross-cut society, resulting in contemporary polities present with different levels of scale and integration. Where present, individual offices of leadership often involve shared distribution systems such that ritual suzerainty and political sovereignty do not necessarily correspond (Southall 1999). Through the understanding that complex societies can exist without the presence of monumentality, the contributors re-orientated their focus onto regional ecological, cultural, and historical fluidity and influences as shapers of the processes of cultural development and their material manifestations.

These and other non-African attempts to move on from the perceived stagnation of the "complex society" debate have drawn upon theoretical tools such as, for example, Giddens' (1984) and Bourdieu's (1977) theories of structuration (whereby individual social engagement is an embodied experience and cannot be divorced from institutions and society), concepts of agency (demonstrating that social landscapes, individual experiences and technology are inter-connected within socially constructed environments) and, to a lesser extent, indirectly biased transmission (where a cultural trait developed or adopted by a successful or high profile person is adopted by the wider society if it proves advantageous) to explain how social complexity has been manipulated and expressed through material culture.

Therefore, how complexity emerges within (usually extra-African) societies has been the subject of numerous studies with different definitions of complexity and evolutionary trajectories (Southall and Gutkind 1970; Earle 1989; 1991; Vail 1991; Yoffee 1993; 2005; Arnold 1996; Johnson and Earle 2000; Southall 1999). One such study uses these theoretical constructions to model how transient, achieved status could have evolved into permanent elites by using agency as the catalyst and structuration as the cultural limitations framing the process (Spencer 1993). Such agencies can include exchange, inter-regional cultural exchanges, and the continual fluid evolution of linking discrete landscapes, including mortuary areas, into conceptual systems (Brass 2007).

However, the analytical focus of these studies has tended to be pitched at the level of socio-political formulation and integration. Some recent studies have attempted to move beyond such vocabulary, recognizing that it throws up conceptual obstacles through its historical baggage within socio-evolutionary theories as

Fig. 2. Google Maps view of the basin where Site 100 is located with remains of Wellcome's buildings visible.

deployed by archaeologists (McIntosh 1999; Pauketat 2007). Such studies attempt to reformulate complexity as a conceptual tool through approaching the material culture with the aim of elucidating the multiple layers and scales of meaning, and their interactions, as their own study thereby removing the artificial boundaries on what constitutes a complex society and its material manifestations (Kohring and Wynne-Jones 2007). The renewed focus on difference scales of interaction and their dynamics, ranging from the individual to institutional or organisational levels, opens new avenues for research exploration and the development of new models on how they may be recognised in the material record, particularly mortuary and settlement localities.

Investigating social complexity through mortuary assemblages

Experiencing and making your way through life entails material and spatial dimensions with continuous cultural re-fashioning of materials, landscapes and bodies. The difficulty lies in how these diverse aspects of life are reflected in and transformed through burial rites, and how they can be reconstructed from the resulting material and skeletal remains. As acknowledged by Fried (1967), although

burial practices may reflect aspects of socially stratified societies, the resultant material traces may not "confirm to later generations the existence of differential status". Generally, different members of society are disposed of according to the social norms. Key factors such as increasing population density or dispersal, and proportional differences in age and sex, do not necessarily correlate with ratios of burial types in a cemetery. An additional challenge lies in determining the changing inter-relationships between kinship groups, where shifting alliances or increases/decreases in power may provide spatial or material pointers that assist in deciphering and reconstructing mortuary data.

Furthermore, there is no direct, inherent correlation between complexity as a conceptual tool and the expression of formalized inequality, which goes against the implicit grain of previous neo-evolutionary studies that not only tended to look for patterns in differences and similarities between societies but also regarded the monopolization of power and resources as being reflected in the variation of grave goods (McGuire 1983b; Paynter 1989; McGuire and Paynter 1991). Essentially, with regards to the latter, incipient, transient and semi-permanent hierarchies may result in increased socio-cultural and thus mortuary heterogeneity as elites consolidate their control over more diverse groups of people and material resources, together with simultaneous differential levels of access to those resources depending on the scale of social hierarchies and the number of groups involved (McGuire 1983b).

One such attempt was a move to look at understanding burials in terms of their social role as "powerfacts", with such work drawing upon social anthropological work on the transformation of kinship during royal death rituals (Hoffman 1979; Huntington and Metcalf 1979). This theoretical focus, as epitomized by the works of Binford and Brown (1971) and Saxe (1970) in particular, gained currency, especially in North American archaeology, as part of an evolution of processualism in which positivist mortuary studies played a large role. Drawing upon the conceptualization of identity as "social persona" or social identity in different relationships (Goodenough 1965), this new focus proposed parameters by which the social standing of the deceased can be measured (Brown 1995).

While the mortuary rites of some early societies may contain material expressions of inequality, Paynter (1989) also cautions that is not indicative of inheritable elite roles and therefore formal stratification. Power can be heterarchical, i.e. counterpoised, not vertically ranked (Crumley 1995), with fluid heterarchical relationships permissible at given scales within broader hierarchical social systems; the heterarchical inter-relationships can be seen as a mechanism through which

different social units aggregate (McIntosh 1993). Thus, the mortuary populations of Jenne-jeno in the first millennium AD have been presented as a homogenised group representative of a heterarchical society attempting to de-emphasise difference in the interests of stability (McIntosh 1995).

For Binford, the parameters for the relationship between the deceased and the community (a determinant of identity) - and the social persona - were age, sex, wealth and societal position (intra- and inter-social social units). McGuire (1983a) later added elements of power and religion. Of these parameters, wealth predominated and was defined as the abundance (or lack thereof) of grave goods, a parameter which lent itself to more easily accessible statistical analysis for social ranking and inference. The living status was inferred in death by measuring, amongst others, energy expenditure in grave construction (O'Shea 1981). This could include differential treatment of the body and grave, ranging from location to grave cut or tumulus size (Binford and Brown 1971).

However, due to different dimensions of burial customs, the construction of the death image also involves items attached to or placed around the body, and the material remnants of items used during mourning or celebratory funeral rites (Parker Pearson 1998). Such an approach moves beyond the number and type of grave goods, with assigned status values, to the recognition that a poor grave may contain a well respected individual who had no requirement to be "indexed" further by the living (Parker Pearson 1998). Further criticisms have centred around how variability is disguised by the application of processual quantitative approaches (Chapman et al. 1981; Hodder 1982; Parker Pearson 1999), which have been used to measure the emergence of inequality and hierarchical social complexity (Tainter 1978; Bard 1994; Wilkinson 1996; Savage 2001).

It is through the manner of burial – the actions of and the social make-up of the mourners – that the deceased is represented and identified (Pearson 1999; Stevenson 2009). By attempting to better understand the nature of rites which do not leave material traces, one can develop a more holistic understanding of apparent differences in burial treatment (Van Gennep 1960) whereby the funeral rites sustain, negotiate and revitalize the social order and identities (Bloch and Perry 1982). In addition, some societies in which status is achieved view it as socially acceptable to deposit high value goods in the graves with older individuals (Binford 1972), while young adults (even those who have already achieved some form of standing) may not be buried with similar goods due to cultural taboos against marking grief in more permanent material form with the body (MacDonald 2001), which is a potential component of embodied experiences of grief (Tarlow 1999).

Moreover, some grave assemblages might be attributable to inheritance (Chapman et al. 1981), which may explain some of the poor quantity of grave goods in prehistoric semi-sedentary pastoralist societies in the eastern Sahara (Kobusiewicz et al. 2010). Other issues concern the effect sampling bias and the time depth of sites have on determining the rate and scale of social change from burial assemblages due to evolving customs, living social orders and the temporal spread of burials whereby burials which seemingly reflect different statuses may be comparable (O'Shea 1981; Parker Pearson 1999). Grave goods may also be comprised, part or in whole, of requisite religious items that are not necessarily directly reflective of the social standing of the individual (Tarlow 1999; Robb 2007).

Moving beyond and recognizing that the treatment and placement of the body can also reflect notions of heterarchical differentiation or alignment, it has been suggested that gender and personal identity are secondary to social standing dependent on age in kinship-based societies (Carr 1995). It is an assertion which can be challenged ethnographically where the concepts are heavily intertwined (Hutchinson 1996) but which can shed light on rules marking the conceptual transformation of living society expressed in material form during death's cultural formation processes.

The make-up of the grave assemblages is thus not necessarily reflective of a person's status and wealth while alive, or a mirror of the social complexity layers of a society, but rather a mechanism through which the living create links to the dead, reflecting on overcoming the social disruption caused by death through the continual creation of burial spaces within the social and physical landscape of the living. Mortuary practices may therefore also involve considerations of territoriality or spatial clustering within cemeteries may indicate elements of relatedness or desired affinity (Dunham 1999; Di Lernia and Manzi 2002; Smith et al. 2002).

Nature of the burial and settlement materials at Jebel Moya

I re-examined the original excavation records at the Duckworth Laboratory and constructed a new Registrar of Graves over the course of 2008-2011. The new registrar includes the results of a re-sexing by the laboratory staff of the extant skeletons also curated at the Duckworth Laboratory. The Registrar and Addison's published grave distribution map form the basis for ongoing study not just of multiple variables such as the quantity and spatial variability of grave goods, artefacts made from non-local raw materials and sexing, but also for the undertaking of cluster analysis using the statistical program R to determine the evidence for and the extent and forms of social differentiation as reflected in the mortuary assem-

Table 1. Known cardinal orientations for human burials

Cardinal orientation	Number of human burials
North	222
North-west	733
North-east	308
South	104
South-east	295
South-west	442
East	226
West	498

blages. It also assists in identifying structuring mortuary principles how material culture was combined and articulated near and/or within graves, and therefore how pottery and other grave goods were used in certain contexts. These analyses are ongoing and the results are in the process of being firmed up. Therefore, the remainder of the article will focus upon those aspects of my research which I am in a position to share, namely what new insights can be derived from the pottery assemblages.

The depth of the site at the time of excavation, from the highest point of the ground surface to the lowest bedrock, is 280 cm (2.8 metres). Four strata were recorded in descending order: Stratum A – D. Of those graves whose stratum position was recorded, 8 were Stratum A, 1778 Stratum B, 1033 Stratum C and 237 from Stratum D. However, these strata hold no correlation with chronologically development of the site (Brass and Schwenniger 2013). There are 313 bodies deposited in oval-shaped graves; the description of the shape of the remainder of the graves has been lost, suffice to say there were tumuli or chamber burials such as are found to the north within and along the Nilotic boundaries of the Meroitic State (Bashir 2010; Francigny 2012; Suková and Cilek 2012).

Of the total number of 3135 human burials, the positioning of 217 were prone, 1695 supine, 355 on their left and 430 on their right side. There were 36 crouched burials. The highest proportion of elongated burials is from those who were buried supine, followed closely by prone. The bodies were also buried in numerous cardinal directions (Table 1). The majority of the burials were facing either in the direction of somewhat north or west.

The types of grave goods recorded in association with the burials are comprised of amulets, anklets, armlets, beads, bone points and implements, borers, bowls, bracelets, celts, clips, coils, earrings, earstuds, grindstones, hair clips, hair ornaments, knives, lipstuds, maceheads, needles, nosestuds, pebbles, pendant, pins, quirms, rings, rubbers, scarabs, shells and statuettes in variable quantities. The raw materials from which these artefacts were made originated locally, from sources along the nearby Niles and from further to the north, likely brought south along Meroitic trade networks.

Central to improving the understanding of the stratigraphic complexity of Jebel Moya and subsequently decoding the inter-site variation in material culture is the establishment of a secure chronology. Briefly (see Brass 2009; Brass and Schwenniger 2013 for further details), the site was first dated by Addison (1949) to the first millennium BC, between 1000-400 BC. He later revised his dates from the last centuries BC to the fourth century AD (Addison 1956). Some forty years later, Gerharz (1994) proposed three phases: Phase 1, early 5th millennium BC; Phase 2, 3000-800 BC and; Phase 3, 800-100 BC. Gerharz used Addison's old Registrar of Graves as the underpinning of his work and did not re-examine neither the extant excavation records or the surviving artefacts, particularly the pottery assemblages.

Classes of pottery assemblages can be sensitive chronological indicators, though caution is necessary against the selection of unsystematic variables which could lead to suppression of variability. As such, variation, change and sometimes function can be deduced through the composition of multi-dimensional datasets. The application of such a textured approach enables engagement with complex behaviours to shed light on socio-economic, ideological, political and personal motives reflected by the methods chosen by potters, and permits archaeologists to move beyond mundane and inadequate descriptions such as "red burnished ware", "Dotted Wavy Line" or "rocker stamp" (Gosselain 2000; Haour *et al.* 2010; MacDonald 2011), contra Caneva (1987). Although Caneva's typological classificatory system remains in widespread use in the Sudan, with modifications (Gatto 2002), issues of style and ceramic cultural traditions as employed through ethnographic and archaeological analyses particularly in West Africa (Gosselain 2000; Gosselain *et al.* 2010; MacDonald 2011) have yet to be adequately engaged with by ceramicists working in the Sudan.

Attribute-based approaches work particularly well with hand-made ceramic vessels, which comprise the entirety of the Jebel Moya assemblages. This approach focuses on an object's characteristics, for example, size, material, colour etc. On

a broader level, its advantage is that one can analyze morphology and design. When applied to pottery, it permits the researcher to break a vessel down into its constituent components which can then be compared intra- and inter-site for statistical coherence (McIntosh 1994). It can also assist in making inter-regional comparisons (MacDonald 2011). There is a requirement to define the tools used during the manufacturing process: the technological and decorative styles have meaning spatially and temporally (Haour et al. 2010). Sometimes large-scale variation means that this needs to be narrowed down to the frequencies of select attributes from which attribute clusters can be generated.

The decision to employ of an attribute-based analytical approach moves the discussion beyond the descriptive (Addison 1949; Clark 1973; Clark and Stemler 1975; Manzo 1995) to open the opportunity for a more textured account through the measuring, distribution (spatially and temporally) and diversity of the pottery (Haour et al. 2010; MacDonald 2011). The previous descriptive analyses looked at surface decoration and at claimed surface similarities with pottery from other regions in the Sudan. Brass and Schwenniger (2013) instead examined the composition of and how the decorative motifs were made on the pottery sherds, and the types of pottery found in mortuary contexts. The variables chosen for the analysis of the British Museum pottery included shape, fabric, surface finish and decoration (Brass and Schwenniger 2013). Aims included the attempted identification of attributes showing evolutionary change and those which marked a distinctive disjuncture, thereby providing a better understanding on what attributes are time sensitive markers. As very briefly summarised above, these attributes allowed for subsequent sorting to identify these trends and to generate relevant typologies through the recognition of analytical types (Brass and Schwenniger 2013).

The previously formulated chronological sequences of change have been challenged by my investigation of the representative pottery collection curated at the British Museum which comprise 486 sherds: Six samples have been OSL dated and a new chronology formulated (Brass and Schwenniger 2013). The internal consistencies of the dates correspond with the division of the sherds into three assemblages based upon attribute analysis (Brass and Schwenniger 2013). In short, Assemblage 1, corresponding to Gerharz's Phase 1, was not dated and comprises of stamped and pivoted comb, while the Dotted Wavy Lines sherds reported by Caneva (Caneva 1991) could not be located. Assemblage 2 comprises of stamped comb, spatula- and stylus-stamped, wad of cord, dragged comb and incised fillet sherds; three samples date the assemblage from the mid-second millennium to the mid-first millennium BC. Assemblage 3 comprises of stylus and comb-stamped, dragged combs and fre-

quent incised lines on sherds; three samples date the assemblage from the 1st century BC until the mid-first millennium BC which is hypothesised to encompass the majority of the burials (Brass and Schwenniger 2013).

While the OSL determinations have proved invaluable in providing reliable bracketing of time periods for the three different assemblages, the dates are not an end in themselves but rather mitigate conflation between chronological and social variation. Essentially, they lay out the chronological backdrop aiding in elucidating information about the social order of the inhabitants. Choices and practices manipulated through subtle changes in the composition of the sequence of production are part and parcel of the technological knowledge system in use by the communities. There is greater inter- than intra-assemblage temper variation, while the use of decorative techniques was fairly standardised within the different assemblages. Within each of the assemblages is a set of shared rules concerning the composition of the temper and production techniques. The potters likely used the vessels as a reservoir of shared production knowledge, or both. Assemblage 2 has the greatest temper variation with sand paste and coarse sanded grit, sometimes with mica and/or chaff. These visual characteristics – temper and firing – represent differences in the working and sorting of the raw materials and firing techniques. The red colouring in the red-ware from Assemblage 2 is a result of firing and the process involved is therefore slightly different from the firing used to produce the other chevron-ware.

By contrast, the primary variation in the later Assemblage 3 occurs not in the temper, which is similar throughout, but rather in the size and thinness of vessels and how the range of decorative motifs was employed. While the rim forms remained relatively stable – mostly thin and simple – there was an increased tempo in stylistic shifts and internal decorative variation compared to the previous assemblages. The previous two assemblages are remarkable for their lack of diversity in motifs. At the same time, the range of decorative techniques – predominantly stylus- and comb-stamped, and incised motifs – has a degree of homogeneity. While the increase in different types of motifs may be suggestive of culturally heterogeneous populations, the osteological studies to date suggest they were biologically homogeneous (Mukherjee *et al.* 1955; Irish and Konigsberg 2007). In addition, the small range of decorative techniques used, the standardisation of patterning (zoned) and its appearance in only a handful of mortuary contexts, despite ubiquity of pottery across the site, is suggestive of an open, non-hierarchically situated knowledge of pottery production with a socially agreed level of individual expression and distribution.

The surface treatments of the Assemblage 3 vessels were highly differentiated, materialising a great deal about technological knowledge systems of the individual makers, and the level of their socio-technological integration within the wider community. The decoration and surface treatments express difference between the individual potters. The degree of standardisation is suggestive that production did not occur at household level, where more diversity in use of resources and pottery recipes would be expected. This is perhaps suggestive of that maybe hierarchical ideals were expressed in material form through controlled clay acquisition and the matrix composition of the sherd, while underlying these are heterarchical aspects of shared technology and production organisation facilitating the complexity of everyday relationships as well as the organising principles of the communities: Jebel Moya potters used specific technological knowledge and practices resulting in sets of standardised techniques and linked the community together through these shared production systems.

Although the operational sequences and technological products were part of the *habitus* of the communities which used Jebel Moya, there is no correlation between the deposition of pottery and the age and/or sex of the individual, or a connection between the inclusion of pottery in burials and graves with comparatively rich burial goods. It appears therefore that pottery was not used to mark status in burial and must be understood as part of the complex social dynamics within which the manufacturers of the pottery operate. Pottery not in direct association with the burials may not necessarily be automatically ascribed to domestic contexts (very scant evidence exists of any form of structures related to settlement or domestic activities). Pottery can symbolise beliefs about the transgenerational nature of the interconnectivity between the living and the dead; by placing pots (whole or broken) near to or on top of a grave, beliefs about age, social achievements and standing are communicated to current participants in the mortuary rites and to future visitors (Sterner 1995). This shifts the focus away from form and function to processes and scales of enculturation, and how the behaviours are inter-connected to the production and reproduction of social boundaries (Gosselain 2000) and by extension to the different material manifestations of social complexity (Kohring and Wynne-Jones 2007).

Social groups have structures and identities which differ and are more flexible, being recognised, interpreted and performed by different individuals based on perceived identities and contexts as befits their interests. People can have multiple, overlapping identities, the material symbols of which are open to manipulation. Therefore, while distinct variations in material culture may reflect forms of social

boundaries, this is not necessarily reflective of ethnic boundaries; this is particularly relevant during the first millennium AD at Jebel Moya with the biological homogeneity of the inhabitants (Mukherjee et al. 1955; Irish and Konigsberg 2007) and the constrained diversity inherent in Assemblage 3. The variety of the decorative motifs, within a structured zoned layout which does not deviate, is a variable which may have its roots both in inhabitants being part of mobile pastoralist societies along the southern frontier of the Meroitic State in the Gezira Plain (Brass 2014).

Discussion

It may be that the Meroitic State extended its reach into the Gezira Plain through expanded agricultural settlements, trade networks and trading stations at around the same time as it moved into the Butana (Edwards 1996; Brass 2014) and it's southern economic basis shifted from winter rainfall to summer rainfall crops like sorghum (Fuller 2013, personal communication), though this idea is based entirely upon the new dates from Jebel Moya and previous dates and botanical remains from Jebel et Tomat as the Gezira essentially remains a vastly underexplored region of the Sudan. The cultivation of sorghum would have been theoretically possible in the Gezira with a required minimum rainfall of only 400mm. Although a dental carie study aligns the skeletal remains with pastoralists and not agro-pastoralists (MacDonald 1999), the botanical evidence from Jebel Tomat (Clark and Stemler 1975) points towards gathering of plants and the cultivation of domestic sorghum as having formed part of the food exploitation systems present in the southern Gezira during the early first millennium AD. There therefore appears to be societies with different degrees of sedentary and pastoral components present in the southern Gezira, which occurs as well in the neighbouring Butana.

What material evidence there is indicates the social development in the central and southern Gezira Plain long proceeded along different lines to societies in and around the area and to the north of Khartoum (Edwards 1996; Fernández *et al.* 2003; Salvatori 2012; Brass and Schwenniger 2013; Sadig 2013). The archaeology to the west and further south is less well known and the establishment of a firmer chronological and social framework for Jebel Moya would assist in anchoring future studies in the region. As the largest known cemetery locality in the region, the site provides extraordinary scope for exploring the interplay and interaction of indigenous and external cultural traditions.

As such, my continuing doctoral research is into the presence of rich burials and detecting potential burial clusters, and how they may relate to indicators of institutionalised hierarchy or transient elites, while the pottery from both

burial and non-burial contexts (Brass and Schwenniger 2013) may be indicative of a permissive form of social mobility and one in which a kin group's standing might be stated or enhanced through rites and social practices creating social legitimacy (Kohring and Wynne-Jones 2007; Fleisher and Wynne-Jones 2010). While there is no indication that any of the graves were of secondary use, there are instances of burials under-cutting, cross-cutting or pushed up against other burials; these may be social members wanting to associate themselves for a variety of reasons (family, status association, etc). The variety and frequency of bodily orientations are not reflective of different temporal periods (contra Gerharz 1994) and may not necessarily be reflective of different groups per say burying their dead at the same locality, but rather it may be due to variable cultural traditions within a particular area.

Additionally, imported items, whether from settlement or burial contexts, can assist in determining external trading contacts. The few known animals – cattle and dog only – may have been buried for a variety of reasons ranging from ritual combating of social unrest or illnesses, a large social ceremony or the death of a prominent leader (an effective change in social status), or to denote changing social conditions such as new long-distance relationships or a new group settling in the area, essentially acting as social bindings in both life and death (Hutchinson 1996) amongst communities using Jebel Moya to burial their dead in the most prominent massif in the southern Gezira Plain. On the southern edge of the Meroitic State which was very likely.

These communities were very likely entwined in long distance trade networks both to the north, to the east into the Butana and possibly to the west with the Meroitic State and other communities. As the largest mortuary complex in sub-Saharan Africa, the site ranks as one of the most vivid symbols of the domestication of power and its materialisation in the landscape, and forthcoming findings should be of interest to both scholars interested in pastoral studies, in communities on the edge of states and empires, and to those scholars engaged in Meroitic studies.

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